

DRAFT

DECISION ON THE NEED FOR AN ENVIRONMENTAL IMPACT STATEMENT

In accordance with s. 1.11, Wis. Stats., and Chapter NR 150, Wis. Adm. Code, the Department is empowered to determine whether it has complied with s. 1.11.

The attached analysis of Proposed NR 450, Wis. Adm. Code pertaining to Control of Atmospheric Deposition of Mercury Emissions is of sufficient scope and detail to conclude that this is not a major action which would significantly affect the quality of the human environment. An environmental impact statement is not required prior to final action by the Department to adopt this rule. This determination was made considering the attached analysis and the following factors:

Environmental Effects

Proposed NR 450, Wis. Adm. Code, Control of Atmospheric Deposition of Mercury Emissions, would reduce mercury emissions from major electric utilities, cap mercury emissions from other major stationary sources, and require mercury emission offsets for new or modified major stationary sources. The reduction of mercury air emissions in addition to emission caps and offsets is expected to have the effect of reducing atmospheric mercury deposition to Wisconsin's environment and ultimately, mercury concentrations in fish and wildlife.

Cumulative Effects

There are no known locally related actions or other activities that would compound the effects of proposed NR 450. There is currently a federal activity to promulgate regulations to control mercury emissions from coal and oil (fossil fuels) fired electric utility plants. This federal activity is the result of the USEPA's determination in December 2000 that mercury emissions from coal and oil-fired electric utility plants need to be regulated. The USEPA is under a schedule to propose regulations by December 15, 2003, and issue final rules by December 15, 2004. Proposed NR 450 includes a requirement for the Department to evaluate federal regulatory activity and make recommendations to revise the rule as needed.

Risk or Uncertainty

There is some uncertainty regarding the environmental impacts of Proposed NR 450. It is not completely known how many or exactly which water bodies in the state would show a reduction in mercury levels with a corresponding reduction of fish advisories as a result of capping, reducing, and requiring offsets of mercury air emissions from major stationary sources located in Wisconsin. It is also not completely known how many years would be required for any particular water body in the state to fully recover from mercury contamination as a result of capping, reducing, and requiring offsets of mercury air emissions from major stationary sources in the state. However, since any amount of reduction of mercury to the state's water bodies would be a positive environmental outcome, these uncertainties associated with Proposed NR 450 are not deemed to have a significant negative impact to public health and safety.

Precedent

NR 450 may encourage and support future actions by other states to promulgate regulations to reduce mercury emissions from electric utilities and other sources of mercury. NR 450 may also assist in development of federal rules to regulate mercury emissions from coal and oil-fired electric utility plants. USEPA is under a schedule to propose rules regulating mercury emissions from utility boilers by December 15, 2003, and promulgate final regulations by December 15, 2004. Regulations to reduce mercury air emissions from other states either through federal regulations or through state regulations would be beneficial to Wisconsin since a portion of mercury deposited to the state is from sources located outside of Wisconsin.

Controversy

There is some controversy over the uncertainty of the proposed rule on the quality of the human environment. This controversy relates to the impacts that would occur to water bodies in the state as a result

of reductions of mercury air emissions from major electrical utilities. Opponents of NR 450 may argue that reducing mercury air emissions from major electrical utilities located in Wisconsin may have no significant impact on reducing mercury in water bodies located in the state and eliminating fish consumption advisories. Others may argue that the proposed rule does not reduce mercury emissions soon enough or that it does not require reductions from all sources of atmospheric mercury. The Department believes that because of the bioaccumulative properties of mercury, reducing mercury air emissions from major electrical utilities in the state would over time, reduce mercury to the state's environment. The Department further believes that the proposed rule is a balanced approach for regulating air emissions of mercury based on currently available control technology. Periodic review opportunities within the rule would allow for assessments and further adjustments of regulations as needed.

Evaluator

Date

Bureau Director

Date

Certified to be in compliance with WEPA*

Director, Integrated Science Services

Date

* If you believe you have a right to challenge this decision, you should know that Wisconsin Statutes and administrative rules establish time periods within which requests to review department decisions must be filed.

For judicial review of a decision pursuant to ss. 227.52 and 227.53, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of natural resources as the respondent.

To request a contested case hearing pursuant to s. 227.42, Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. The filing of a request for a contested case hearing is not a prerequisite for judicial review and does not extend the 30-day period for filing a petition for judicial review.

This notice is provided pursuant to s. 227.48(2), Wis. Stats.

II. HISTORY AND BACKGROUND

Summarize the history of the proposed rule or legislation and explain why the proposal was developed. Identify Department programs, outside individuals and groups contacted in the development of this proposal. Describe how these groups were involved and summarize any key concerns that remain.

If this proposal is part of a larger effort that involves other rule or legislative proposals that are being processed separately, describe the overall effort and list the related activities.

The Department of Natural Resources is proposing administrative rules under s. 285.11(9), Wis. Stats., to reduce mercury emissions to the air from major electric utilities, cap mercury air emissions from other major stationary sources, and require offsets of mercury emissions from new or modified major stationary sources. The Department believes that emissions of mercury to the air from major electric utilities and other major stationary sources significantly contribute to mercury entering water bodies and ultimately fish and wildlife. The Department believes that atmospheric mercury deposition has contaminated nearly all of the state's water bodies to some level resulting in a statewide fish consumption advisory.

At the Natural Resources Board meeting conducted on December 6, 2000, the Department presented a resolution to the Board requesting and receiving authority to draft rules to regulate atmospheric emissions of mercury (see attached Resolution). The Board instructed the Department to return in March 2001 (subsequently postponed until June 2001) with proposed rules that protect public health and the environment, but are cost-effective, reasonable, and do not interfere with the ability of electric utilities to supply the state's energy needs.

The proposed rule is currently not part of any larger efforts involving a rule or legislative proposal. Development of the proposed rule is with authorization of the Natural Resources Board and is under s. 285.11(9), Wis. Stats., which directs the Department to: "*prepare and adopt minimum standards for the emission of mercury compounds or metallic mercury in the air.*" Development of the rule is by the Air Management program.

A. Petition

On May 18, 2000, a petition was submitted by the Environmental Decade and others to the Department of Natural Resources and Natural Resources Board to adopt administrative rules under s. 285.11(9), Wis. Stats., requiring reductions in mercury emissions from the largest known sources of emissions. The petition was signed by several members of the legislature in addition to representatives of environmental organizations, conservation groups, and sporting clubs. It requested the adoption of rules to control mercury deposition to Wisconsin's lakes and rivers because of the current large number of fish consumption advisories. The main rule provision of the petition included a 90% reduction of mercury air emissions by the year 2015. Subsequently, on September 15, 2000, the Department received an amended petition that changed the main rule provision from 90% reduction in mercury air emissions by the year 2015 to the same 90% reduction level by the year 2010. It also added to the number of petitioners (see attached May 18, 2000 Petition and September 15, 2000 Amended Petition).

In addition to the 90% reduction in mercury air emissions, the amended petition also requests the following provisions:

- a) Creation of a comprehensive program within DNR to address mercury.
- b) Appointment of mercury control council.
- c) Requirement for determining baseline mercury emission levels.
- d) Establishing mercury emissions cap on 1999 emissions.
- e) Possible interim emission reduction requirements including 25% by the year 2006.
- f) Fines and other disincentives.
- g) Opportunity for two year variance.

The amended petition was presented as an informational item by the Department during the Natural Resources Board meeting conducted on September 27, 2000.

B. Mercury Issue

The Department of Natural Resources recognizes mercury as an environmental pollutant and a potential hazard to human health and wildlife. The Department is concerned about mercury because the pollutant has unique properties that allow it to persist in the environment and bioaccumulates in terrestrial and aquatic system food chains. This bioaccumulation problem poses a human health risk for people that consume mercury-contaminated fish. Mercury is a potent neurotoxin that crosses both the blood-brain and placental barriers. Children and developing fetuses are most at risk from the effects of mercury exposure. Mercury also affects both fish-eating birds and mammals.

Mercury in the environment is the result of both natural and anthropogenic (man-made) activities. In the atmosphere it exists in three basic forms including elemental mercury vapor, particle bound mercury, and reactive gaseous mercury. It is cyclic in nature and the different forms all exhibit different transport characteristics. Depending on source parameters and meteorological conditions, mercury may be emitted and deposited back to earth on a local, regional, or global scale.

Since the 1970's, the Department has been monitoring mercury in the environment including the sampling of fish tissue for mercury. The Department has sampled 1200 water bodies and has found mercury in fish in all water bodies tested using a newly adopted 0.05 part per million in fish tissue standard (the Department announced the new standard on February 28, 2001). The high levels of mercury pose potential health risks to people and wildlife that consume fish. As a result, health advisories have been established restricting the human consumption of fish from nearly all water bodies in the state.

In addition to the health risks caused by elevated levels of mercury in the environment, the Department is also concerned with the important economic consequences associated with a potential reduction of recreation and tourism activities. Each year the Department sells approximately 1.5 million fishing licenses (1 million are residents) generating approximately \$1.1 billion in expenditures to the state. Adding to license sales is the significant revenue provided by sales of food, lodging, gasoline, and sporting equipment related to fishing as an activity with a total economic impact of \$2.1 billion statewide. The sport fishing industry accounts for 30,500 jobs in the state each year. The Department is concerned that the continual listing of fish consumption advisories because of elevated levels of mercury could cause a corresponding decrease in recreation and tourism and have a direct economic impact on the state.

Significant progress has been made in reducing the direct discharge of mercury to the waters by industrial and municipal sources. The Department believes that much of the mercury now entering the waters of Wisconsin is the result of atmospheric deposition. One of the largest sources of mercury emissions in the state are fossil fuel-fired boilers used to generate electricity since coal and oil contain significant amounts of naturally occurring mercury that is released to the air when these materials are combusted (see Table 1: Estimated Mercury Emission In Wisconsin). Chlor-alkali production (manufacture of chlorine and caustic soda) and waste incineration are also large sources of mercury emissions. Mercury released to the air can be deposited locally (very near the source) or can travel longer distances to be deposited within the Great Lakes region or on a national or global scale.

As required by Section 303(d) of the Clean Water Act, the Department identified and submitted to the USEPA, a list of water bodies currently not meeting water quality standards. Many of these water bodies (as determined from the fish advisory list) are impaired by atmospheric deposition of mercury. The USEPA has established an 8 – 13 year time frame to address the listed water bodies with a plan to remove existing impairments through appropriate Total Maximum Daily Loads (TMDLs). To address the requirements of Section 303(d) of the Clean Water Act, the Department must establish TMDL's for water bodies impaired by atmospheric deposition.

TABLE 1: ESTIMATED MERCURY AIR EMISSIONS IN WISCONSIN (Pounds)

	WI 1990	WI 1995
Incidental to Energy Production		
Coal (total)	(2,361)	(2,508)
electric utility coal	1,967	2,088
commercial/industrial coal	391	417
residential coal	3	3
Petroleum Sector (including refining & combustion of products)	580	509
Wood	13	10
Natural gas	0.24	0.3
Refuse Derived Fuel - Utility	11	9
Gasoline & Diesel - Mobile Sources	223	231
Tire Derived Fuel - Utility	6	12
Subtotal Incidental to Energy Production	3,188	3,268
% of total state emissions	40%	50%
Largely Resulting from the Purposeful Use of Mercury		
Latex Paint Volatilization	500	10
Municipal Solid Waste Combustion	1,041	176
On-site Household Waste Incineration	666	270
Medical Waste Combustion	363	601
Sewage Sludge Incineration	166	166
Fluorescent Lamp Breakage	107	107
Class IV Incinerators	55	0
Chlor-alkali Production	1,072	1,114
Battery Production	4	2
Electrical Apparatus & Instrument Manufacturing	37	37
Crematories	36	38
General Laboratory Use	56	42
Dental Preparation	56	28
Hazardous Waste Incineration	0	0
Landfill Volatilization	13	13
Recycling Mercury from Products within WI	4	35
Smelters that Recycle Cars & Appliances	69	69
Volatilization from Dissipative Use	2	2
Fungicide Volatilization	86	25
Volatilization from Spills & Land dumping	55	48
Volatilization during SW Collection & Processing	258	258
Volatilization: Land Application of Compost	2	1
Volatilization: Land Application of Sludge	126	126
Subtotal: Purposeful Use of Mercury	4,774	3,168
% of total state emissions	59%	48%
Emissions Incidental to other Activities		
Taconite Processing	0	0
Pulp & Paper Manufacturing	4	4
Soil Roasting	12	12
Lime Production	92	128
Subtotal: Emissions Incidental to other Activities	108	144
% of total state emissions	1%	2%
GRAND TOTAL =	8,069	6,580

Source: Bureau of Air Management, Wisconsin Department of Natural Resources

The Department does not believe that current state regulations are sufficient to reduce atmospheric deposition and bioaccumulation of mercury to Wisconsin's environment. Emissions from the chlor-alkali facility and waste combustion are currently regulated under state adopted federal regulations. However, there are no federal rules regulating mercury air emissions from electric utility power plants. The Department does regulate mercury air emissions under NR 445, Wis. Admin. Code, however, emission limits are based on protecting the public from unacceptable mercury exposure due to direct inhalation of mercury. The regulation does not address the bioaccumulative properties of mercury. NR 445 also exempts emissions, including mercury, from the combustion of virgin fossil fuels.

C. Department Mercury Strategy

In response to its concern with mercury deposition and the associated large number of fish consumption advisories, the Department issued a draft White Paper on a mercury reduction strategy in January 1999. The purpose of the paper was to stimulate meaningful discussion and movement towards reductions in atmospheric mercury emissions in the state. The Department convened a stakeholders group of representatives from government, industry, and environmental organizations that met four times during the winter and spring of 1999.

In August 1999, the Department issued a final draft White Paper entitled *Recommended Strategy for Mercury Reductions to the Atmosphere in Wisconsin*. This final draft strategy includes consideration of comments and concerns from the stakeholders group. The final draft strategy recommended establishing a mercury cap, trading, banking and offset program for major sources (defined as at least 10 pounds of mercury emissions per year) that would achieve a 20% reduction in air emissions by 2005, a 35% reduction by 2010, and a 50% reduction by 2015. The draft strategy also recommended that the baseline used to calculate percentage reductions from major sources would be the average of their mercury emissions for 1997, 1998, and 1999. Significant stakeholder concerns regarding the strategy included the following:

- Need to promote more voluntary mercury reduction measures.
- The federal government should take the lead on mercury regulations.
- Trading between different sectors would promote local problems.
- TMDLs should not be used as a regulatory tool to justify mercury reductions.
- The cost of control is too high for the benefit.

D. Proposed Legislation

On May 25, 1999, Senator Brian Burke (D-Milwaukee) and Representative Dean Kaufert (R-Neenah), introduced Senate Bill 177 (SB 177). The bill would regulate mercury emissions to the air from certain stationary sources, provide revenue and an appropriation for research related to mercury emissions, establish a mercury emission allowance and trading system, and directed the Department to complete certain reports. Mercury air emissions would be capped in the year 2000 and sources would be required to reduce emissions by 15%, 30% and 50% by the years 2005, 2010 and 2015 respectively. It was referred to the Senate Committee on Agriculture, Environmental Resources and Campaign Finance Reform. A public hearing was held on August 25, 1999, in Rhinelander, Wisconsin. Department Secretary George Meyer provided testimony before the senate Environmental Committee (see attached 8/25/99 Meyer testimony). On February 8, 2000, after a Senate amendment (Senate Amendment 1 to Senate Substitute Amendment 1) was adopted, the bill was adopted and referred to the Joint Committee on Finance.

A second amendment (Senate Substitute Amendment 2) with emission limits of 25% by 2005, 50% by 2010, and 60% by 2015, was adopted by the Joint Committee on Finance. The amendment also allowed for the Department to make adjustments of emission reduction requirements based on available control technology for minimum reductions of 15% by 2015 and 35% by 2010, and maximum reductions of 90% by 2015. However, Senate Bill 177 failed to be adopted by the Committee by a vote of 7 to 9.

E. Federal Determination

Section 112 of the Clean Air Act (CAA) requires the USEPA to perform a study of toxic emissions from electric steam generating units and submit a report to Congress on the findings of the study. Section 112 of the CAA also requires USEPA to make a determination as to whether it is appropriate and necessary to control hazardous air pollutants from electric steam generating units based on the results of the utility study. USEPA issued the Utility Report to Congress in February 1998. In the report, the agency concluded that of all the toxic pollutants emitted by electric utility plants, mercury posed the greatest hazard to public health. An earlier 1997 USEPA study on mercury concluded that coal-fired power plants were the largest source (33 percent) of man-made mercury emissions in the country.

In December 2000, the agency issued its determination that because of the risks to human health, mercury emissions from electric utility power plants must be reduced. The agency is now required to develop proposed regulations by 2003 and issue final rules by 2004. Currently, there are no federal regulations controlling mercury emissions from fossil fuel-fired boilers used to generate electricity.

F. Other States

Forty-one states have some type of fish consumption advisory related to mercury contamination. A number of these states have initiated actions to reduce mercury emissions to the atmosphere from sources located within their respective state. These include:

Maine – Enacted legislation in 1998 to limit mercury emissions by any source to 100 pounds per year by the year 2000 and 50 pounds per year by the year 2004.

New Hampshire – In January 2001, the Governor of New Hampshire announced a Clean Power Strategy that when implemented, will reduce emissions including mercury from fossil fuel power plants. The strategy calls for mercury reductions of 75% from 1990 levels. Legislators from both parties have agreed to sponsor the New Hampshire Clean Power Act, legislation to implement the strategy.

Minnesota – The Minnesota Pollution Control Agency is implementing an Advisory Council's recommendation for a 70% reduction in mercury emissions from 1990 levels by 2005. Minnesota's mercury reduction initiative is an industry voluntary program approved by the state legislature.

Michigan – Initiated an active stakeholder forum discussing strategic issues regarding mercury reductions.

Massachusetts – In April, 2001, the Governor of Massachusetts announced new regulations requiring the state's power plants to reduce their emissions of four pollutants including mercury. Plant owners are required to stack test for mercury emissions and the state will evaluate mercury emission control technologies and propose mercury emission standards in 2003 to be met by October 1, 2006.

Northeast – The Conference of New England Governors and Eastern Canadian Premiers signed a plan in May 1998 which establishes a regional goal of reducing mercury emissions by 50% by the year 2003.

III. PROPOSAL DESCRIPTION

A. Objectives

Summarize what the proposal is supposed to accomplish by listing the environmental, administrative or other objectives of the proposal.

The Department proposes to require atmospheric mercury emission reductions from major electric utilities, cap mercury emissions from other major stationary sources, and require offsets of potential mercury emissions from new or modified major stationary sources. This requirement would be within Chapter NR 450 Wis. Adm. Code and adopted under s. 285.11(9), Wis. Stats. The objective of the proposed rule is to

set limits on the emissions of mercury into the ambient air from mercury sources as a means of reducing atmospheric mercury deposition to Wisconsin's environment and specifically, the State's water bodies. This would reduce the mercury concentrations in fish and wildlife that consume fish. Reducing the mercury concentration in fish will reduce the human health risk associated with that portion of the population that consumes fish. It will also reduce the potential negative economic impacts associated with fish consumption advisories

B. Key Studies / Assumptions / Policies

Identify and summarize any key studies, assumptions or policies that helped shape the proposal.

The proposed rule would reduce mercury air emissions from major electric utilities, cap mercury emissions from other major stationary sources, and require emission offsets for new or modified major stationary sources, with the purpose of reducing mercury contamination in the environment and the risk to human health and wildlife. The Department's position that mercury air emissions from major electric utilities need to be reduced, mercury emissions from other major stationary sources need to be capped, and emission offsets are needed for new and modified affected sources, is based on the following:

- All of the 1200 water bodies tested in the state exceed the current 0.05 parts per million fish tissue standard for mercury. Nearly all of the water bodies in the state have some level of fish consumption advisory due to mercury contamination.
- Atmospheric deposition of mercury is the dominant pathway for mercury to enter the environment and ultimately in fish and other wildlife in Wisconsin.
- The largest unregulated source of mercury air emissions in the state is fossil fuel-fired boilers used to generate electricity.
- Mercury control technologies are or will be available in the near term to meet the reduction requirements in the proposed rule.
- Although mercury air emissions from sources located outside the state contribute to mercury deposition in Wisconsin, in-state sources contribute to in-state deposition.

The foundation of the proposed rule is based on a number of comprehensive studies on the effects, sources and control of mercury emissions. They include the *Mercury Study Report to Congress* (December 1997), *Utility Air Toxics Report to Congress* (February 1998), *National Academy of Sciences Mercury Report* (July 2000) and NESCAUM (Northeast States for Coordinated Air Use Management) report *Environmental Regulation and Technology Innovation: Controlling Mercury Emissions from Coal-Fired Boilers* (September 2000).

The Clean Air Act required USEPA to study the public health effects of air toxic emissions from utilities that burn fossil fuels (coal, oil, and natural gas) and determine whether it is necessary to regulate those emissions. Based on this requirement, USEPA published the Mercury Study Report to Congress in 1997 and the Utility Air Toxics Report to Congress in 1998.

The Mercury Study Report is an assessment of the magnitude of mercury emissions by source, the health and environmental implications of those emissions, and the availability and cost of control technologies. The report identifies fossil fuel-fired power plants as the largest source of human-generated mercury emissions in the country accounting for 33 percent of the total anthropogenic (man-made) emissions. Using computer modeling of the transport of mercury air emissions, the report estimates that in general, 7-45 percent of the total mercury emitted by a source is predicted to deposit within 31 miles of the source.

The Utility Air Toxics Report examined emissions from power plants and provides information on the emission, fate, and transport of hazardous air pollutants (HAPs). Primary components of the report include a description of the industry, analysis of emissions data, assessment of hazards and risks associated with

HAPs, discussion of alternative control technologies. The report identified mercury as the toxic of greatest concern from electric utility power plants.

In addition, USEPA gathered additional data from electric utility power plants and used the data to estimate 1999 nationwide, state, and plant-by-plant mercury emissions. The data confirm that coal-fired power plants are the largest source of man-made mercury emission in the U.S. at about 43 tons of mercury each year. Based on USEPA's estimates, coal-fired electric utility power plants located in Wisconsin (see Figure 1) released approximately 1,969 pounds of mercury in 1999. Based on emission estimates submitted by industry sources to the Department under NR 438 Wis. Admin. Code, Reporting Requirements, electric utility power plants in Wisconsin emitted 2,305 pounds of mercury in 1999 (see Table 2).

Table 2

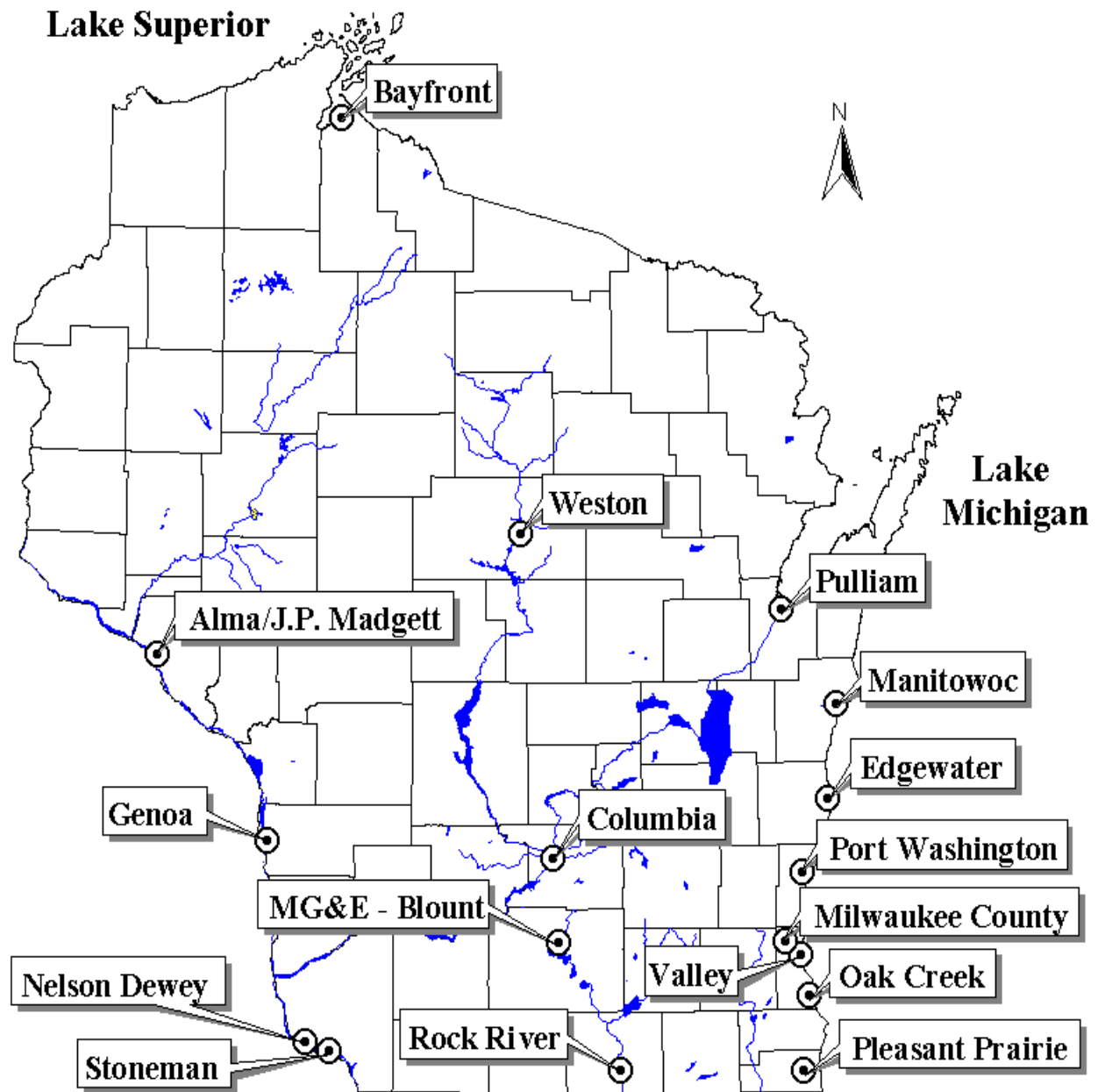
1999 Mercury Emissions Information Submitted to the DNR under NR 438 Reporting Requirements For All Electric Utility Plants (Sorted by Facility)

Facility Name	County	Mercury Emissions lbs/yr
ALLIANT ENERGY – COLUMBIA	COLUMBIA	483
ALLIANT ENERGY – EDGEWATER	SHEBOYGAN	444
ALLIANT ENERGY - NELSON DEWEY	GRANT	52
ALLIANT ENERGY - ROCK RIVER	ROCK	23
DAIRYLAND POWER COOP – ALMA / J.P. MADGETT	BUFFALO	81
DAIRYLAND POWER COOP – GENOA	VERNON	57
MADISON GAS & ELECTRIC CO – BLOUNT STREET	DANE	10
MANITOWOC PUBLIC UTILITIES	MANITOWOC	*10
MID-AMERICAN – STONEMAN	GRANT	0
NORTHERN STATES POWER (XCEL) – BAY FRONT	ASHLAND	3
WI PUBLIC SERVICE CORP – PULLIAM	BROWN	61
WI PUBLIC SERVICE CORP – WESTON	MARATHON	110
WIS ELECTRIC POWER - OAK CREEK	MILWAUKEE	238
WIS ELECTRIC POWER – PLEASANT PRAIRIE	KENOSHA	618
WIS ELECTRIC POWER – PORT WASHINGTON	OZAUKEE	65
WIS ELECTRIC POWER – VALLEY	MILWAUKEE	45
WIS ELECTRIC POWER – MILWAUKEE COUNTY	MILWAUKEE	5
* Emissions calculated by DNR using USEPA ICR data. Reported mercury emissions for 1999 were 90 pounds.		2,305

Source: Wisconsin Department of Natural Resources, Bureau of Air Management

USEPA also provided funding for the National Academy of Sciences (NAS) to review the health effects data associated with methylmercury and the agency's "reference dose" for mercury. In its report, issued in July 2000, the NAS affirmed that USEPA's reference dose (the level at which most people could be exposed without the risk of health problems) of 0.1 micrograms of methylmercury per kilogram of body weight per day is scientifically justifiable. On February 28, 2001, the Department announced its adoption of EPA's recommended reference dose that translates to a 0.05 parts per million fish tissue sample for mercury standard. Based on Department calculations, all 1200 water bodies tested in Wisconsin exceed the new mercury standard and nearly all water bodies in the state have a fish consumption advisory due to mercury contamination.

Figure 1.
**FOSSIL FUEL-FIRED ELECTRIC UTILITY
 PLANTS IN WISCONSIN**



Source: Wisconsin Department of Natural Resources, Bureau of Air Management

C. Major Provisions

Summarize the major provisions of the proposal and identify key new requirements.

The following are the major provisions of the proposed rule. Please refer to the rule analysis for more specific detail on the requirements of the rule.

Baseline Emissions – Within two years after promulgation of the rule, major electric utilities and other major stationary sources would be required to submit a report to the Department with an estimate of annual mercury emissions for each facility for the years 1998, 1999, and 2000. (Refer to the rule analysis for a definition of major electric utilities and major stationary sources). Within three years after promulgation of the rule, the Department would set baseline mercury emissions for major utilities and major stationary sources. Beginning in the year following written notification of baseline emissions, affected sources would not be allowed to exceed baseline mercury emissions.

Reduction Requirements – Major electric utilities would be required to achieve the following reductions in mercury emissions from baseline emissions by the following dates after rule promulgation:

1. Five years – 30% reduction.
2. Ten years – 50% reduction.
3. Fifteen years – 90% reduction.

Emission Offsets – New and modified construction of major stationary sources would be required to obtain emission offsets at a ratio of 1.5 to 1.0 for potential mercury emissions.

Compliance – Sources would be allowed to achieve compliance using any combination of control technology, emissions trading, or securing emission reductions from unregulated sources.

Banking and Trading – The Department would certify mercury emission reductions achieved through a pollution reduction project, or mercury containing products reduction project. Certified emission reductions could be banked and traded to achieve compliance with rule requirements

Variances – In consultation with the Public Service Commission, the Department would be allowed to grant variances to major electric utilities under certain conditions that include a threat in electric reliability, disruption of fuel supply, or other uncontrollable event.

Evaluation Reports – The Department would be required to prepare a rule assessment report to the Natural Resources Board within six years from the rule promulgation date taking into consideration electric reliability, scientific and technology developments, multi-pollutant reduction approaches, and federal regulatory activity. The report would include an evaluation of the feasibility of achieving the ten and fifteen year reduction requirements and recommendations for corrective actions and rule revisions. The report would also include an assessment of the impacts of the trading provisions in the rule on local water quality. The department would be required to update the report within eleven years of rule promulgation. In addition to the six year and eleven year evaluation reports, the department would be required to submit a report within six months of the proposal of federal regulations for mercury reductions from sources affected by this rule.

D. Exemptions

Identify and explain any implicit or explicit exemptions provided by the proposal.

The proposed rule would regulate all major stationary sources that emit 10 pounds or more of mercury per year. Major electric utilities would be required to reduce their air emissions of mercury (see Table 4). Other major stationary sources would have their air mercury emissions capped at current levels (see Table 3). Sources exempt from the rule would be all sources of air mercury emissions emitting less than 10 pounds of mercury per year. These small sources emitting less than 10 pounds of mercury per year generally include non-combustion sources, fossil fuel-fired boilers not used to generate electricity, and small manufacturing sources. These small sources are not proposed for regulation in the rule because they are small emitters of atmospheric mercury and the Department does not believe that controlling their mercury emissions would be practicable at this time.

IV. AFFECTED ENVIRONMENT

A. Physical and Biological Environment

Briefly describe the physical or biological environment affected by the proposal. For new proposals substantially affecting a particular region, also provide a location plan or map. For new or substantial statewide proposals, be sure to describe the extent, quality and uses of the affected resource.

The proposed rule would reduce atmospheric mercury emissions from major electric utilities, cap mercury emissions from other major stationary sources, and require mercury emission offsets for new or modified major stationary sources. A reduction in atmospheric mercury emissions would have the potential to affect the entire surface area of the state, including all land and water resources, with a reduction in the deposition of atmospheric mercury. Mercury emissions released into the air are deposited back to the surface mainly through wet deposition (precipitation) and dry deposition (particulate matter). Since the deposition of mercury emissions is dependent on meteorological conditions and emission source parameters (i.e. stack heights, etc.) all land and water surfaces in the state would be potentially affected in a positive manner with a reduction in mercury deposition. This would include state water bodies impaired because of fish consumption advisories. A reduction in mercury deposition to land and water surfaces of the state would affect fish and wildlife in a positive manner with a reduction in the accumulation of mercury in fish and animal tissue. This would have the effect of reducing the risk to human health for that portion of the population that consumes fish from state water bodies.

B. Government, Industries, Organizations, Other parties

Specifically identify those units of government, industries, organizations, and other parties that would be affected by the proposal and explain how each would be affected.

Baseline Mercury Emissions

The rule proposes to establish a mercury emissions baseline for all major stationary sources (including electric utilities) that had actual emissions of mercury of 10 pounds or more in every calendar year from 1998 through 2000. The emissions baseline for these affected sources would be determined from the average mercury emitted by the source in 1998, 1999, and 2000. Affected sources would be required to submit a report to the Department within two years of the promulgation of the rule that includes an estimation of their mercury emissions. Within three years of rule promulgation, the Department would provide written notification to sources of their baseline mercury emissions. Beginning in the year following

notification of their baseline mercury emissions, sources would not be allowed to exceed their baseline emissions.

In addition to the four major electric utilities required to meet reduction provisions, twelve major stationary sources are projected to initially be affected by the proposed rule with a mercury emissions baseline (see Table 3). This table shows sources that reported emissions to the Department of at least 10 pounds in each of the three years 1997, 1998, and 1999 under NR 438 Wis. Adm. Code. Although the rule would use emissions from 1998, 1999, and 2000 to determine baseline emissions, data for 2000 was not yet available for this analysis. Based on the information in Table 3, mercury emissions from these sources would be capped at the 3-year average of approximately 1,736 pounds per year. The twelve listed facilities are not expected to incur mercury emission reduction costs as a result of the limitation to baseline emissions in the proposed rule. The actual sources affected by the rule may change due to corrected errors in past reported emissions. Others major stationary sources may be affected by the rule after promulgation if the Department determines they emit 10 pounds or more of mercury in three consecutive years.

(Table 3) Major Stationary Sources (not including major utilities) that Emitted 10 Pounds or More Mercury Per Year (as reported to the DNR under NR 438).

Facility Name	County	Category	Mercury Emissions – Lbs/Year			
			1997	1998	1999	Average
VULCAN MATERIALS	Wood	Chlor-Alkali	1,092	1,082	1,082	1,085
BARRON CTY WASTE TO ENERGY	Barron	Incinerator	195	187	188	190
APPLETON PAPERS - LOCKS MILL	Outagamie	Incinerator	128	162	129	140
WEYERHAEUSER	Marathon	Boiler	78	64	53	65
DELTA GROUP	Wood	Process	61	59	61	60
CONSOLIDATED PAPERS - KRAFT DIV	Wood	Boiler	44	48	52	48
FORT JAMES	Brown	Boiler	48	47	47	47
UW MADISON – CHARTER ST	Dane	Boiler	37	36	46	40
FRENCH ISLAND RDF BOILERS	Eau Claire	Incinerator	24	24	24	24
ROCKWELL LIME	Manitowoc	Kiln	13	14	13	13
CONSOLIDATED PAPER - NIAGARA	Marinette	Boiler	12	14	14	13
MANITOWOC PUBLIC UTILITIES ¹	Manitowoc	Boiler	12	12	10	11
Total Emissions			1744	1749	1719	1736

¹ Adjusted based on USEPA ICR data.

Source: Wisconsin Department of Natural Resources, Bureau of Air Management

Major Electric Utility Emission Reductions

The proposed rule would require major electric utilities with baseline emissions of 100 pounds or more to reduce their emissions of mercury by 30%, 50%, and 90% from baseline emissions in five year increments after promulgation of the rule. To indicate which utilities may be affected, historic emissions were estimated based on the three year average of fuel consumption (mmbtu) from 1997 through 1999 (2000 emissions data not yet available) and a correlation of US EPA mercury emission rates determined from the agency's information collection request for electric utilities. The results in Table 4 show that four electric utilities emit mercury above the 100 pounds per year threshold for a total of 2,083 pounds per year. This is equal to approximately 99% of the state's mercury emissions from electric utilities.

Table 4. Mercury Emissions from Electric Utilities (1998 – 2000 Average)

Utility	Facility	Mega Watts	Ave Mercury Emissions (lbs/yr) ^a	Emission Rate (lbs/tbtu)	Percent of Utility Emissions	Utility Mercury (lbs/yr)	Percent of Utility Emissions	Threshold Category
WEPCO	Pleasant Prairie*	1,233	816	7.96	38.6	1,119	53.0	<i>Major Utility Mercury emissions 100 lbs or more per year.</i>
	Oak Creek	1,192	218	3.29	10.3			
	Port Washington*	320	63	4.27	3.0			
	Valley*	272	16	0.93	0.8			
	Milwaukee Cty	11	6	7.8	0.3			
Alliant	Columbia*	1,024	322	4.02	15.2	590	27.9	
	Edgewater	780	182	3.39	8.6			
	Nelson Dewey*	200	62	4.23	3.0			
	Rock River	150	24	3.28	1.2			
WPSC	Weston	497	148	3.8	7.0	209	9.9	
	Pulliam	388	61	2.13	2.9			
DLP	Alma/JP Madget	523	127	4.56	6.0	167	7.9	
	Genoa	346	40	2.01	1.9			
MPU	Manitowoc	63	11	2.86	0.5	11	0.5	<i>Mercury emissions more than 10 lbs but less than 100 lbs/year.</i>
MGE	Blount Street	143	7	1.30	0.3	7	0.3	<i>Mercury emissions less than 10 lbs/yr.</i>
XCEL (NSP)	Bayfront*	73	6	1.50	0.3	6	0.3	
Mid-American	Stoneman	52	2	4.96	0.1	2	0.1	
Total		7267	2,111		100	2,111	100	

^a Mercury emissions based on EPRI's/EPA 1999 ICR emission correlation and emission estimates and the unit's three-year average fuel consumption.

* Individual unit or facility participated in Hg emissions testing for EPA 1999 ICR program

Source: WI DNR Bureau of Air Management

V. ENVIRONMENTAL CONSEQUENCES

A. Impacts on Environment

Identify and briefly describe anticipated direct and indirect impacts on the physical and biological environment. Indicate substantial impacts that can not be avoided and irreversible or irretrievable commitments of resources that would result.

The proposed rule would reduce the deposition of atmospheric mercury emissions to Wisconsin's environment and specifically, to the State's water bodies. Reducing the deposition of mercury to the environment and to water bodies will result over time, in lower concentrations of mercury in the tissue of fish. This will result in lower concentrations of mercury in wildlife that consume fish (i.e. loons, eagles, mink, otter, and osprey) and reduced risk to human health for that portion of the population that consumes fish.

B. Economic Impacts

Identify and briefly describe anticipated direct and indirect economic impacts. Refer to the fiscal note for the discussion of costs to the Department and local governments. Address the costs and the impacts of those costs to individuals, industries or other affected groups as well as to local economies.

Direct Impacts – A variety of options are available to achieve reductions in mercury emissions from fossil fuel-fired boilers used to generate electricity. These options include switching from coal to natural gas or other solid fuel with a lower mercury content (e.g. coke, biomass, etc.) and several pre and post combustion control technologies.

The majority of post combustion technologies center on the absorption of mercury onto a particulate that is then removed by particulate control devices. This removal process already occurs to some extent as mercury has been found to adhere onto exiting flyash and then be captured by the existing particulate control system. Flyash typically contains unburned carbon that can be a very active adsorbent material. In some cases, the removal of mercury can be enhanced with ductwork modifications to increase contact time and mixing with flyash. This is potentially a low cost way to achieve modest increases in mercury reduction.

USEPA in collaboration with the National Energy and Technology Laboratory (NETL) analyzed existing mercury control technologies for electric utility boilers. The NETL determined that a practical approach to achieve significant control of mercury emissions on existing utility boilers is to inject additional adsorbent material, such as activated carbon, into the exhaust gas stream. This increases the mercury to particulate adhesion and absorption interaction and thereby increases the mercury removal efficiency of the existing particulate control systems. The mercury reduction is increased by the injection of more adsorbent material into the flue gas stream. The overall mercury removal efficiency at any one unit is a function of several parameters including the amount of injected adsorbent, the amount of adsorbent and mercury activity, contact time, and the removal efficiency of the particulate control device.

The NETL analysis developed cost and control information based on the use of commercially available activated carbon as the adsorbent material. The use of activated carbon has several potential impacts including increased maintenance, corrosion/deposition problems, and increased carbon content in the flyash. The most prevalent concern is the impact on flyash as carbon content affects its usability in concrete manufacturing. The NETL information pertinent to Wisconsin utility boilers showed the amount of required activated carbon increases dramatically above a 75% to 80% reduction level at any individual unit. NETL also identified the use of a primarily lime with activated carbon mix instead of carbon alone. This has the potential to reduce cost by 40% and significantly reduces associated carbon impacts. The use of lime and activated carbon as well as other alternative adsorbent materials are currently undergoing development and analysis through pilot projects.

The application of activated carbon injection at a 70% reduction level to one primary unit for each of the four major utilities would achieve an overall 30% reduction in major utility baseline mercury emissions in Wisconsin. Based on the NETL adsorbent information, it is estimated that this reduction level results in additional flyash carbon content of less than 3% for activated carbon adsorbent and 0.3% for the lime/activated carbon mixture for the

Wisconsin units. This level of reduction is targeted to minimize the potential impact of carbon use in the system. This first phase reduction of mercury emissions would occur 5 years after the effective date of the rule.

A second installation of adsorbent injection for each of the four major utilities is estimated to yield a 50% reduction in mercury emissions from the major utilities overall baseline emissions. This representation of a second phase would occur 10 years after the rule becomes effective. It is anticipated that the installation of a second adsorbent injection unit to achieve a 50% overall level of reduction would include the primary units for each major utility.

The NETL analysis showed that to achieve very high reduction levels it becomes more cost-effective to install a fabric filter system in lieu of increasing the activated carbon injection rate. A fabric filter system has the potential to remove 90% and upwards of mercury emissions while using significantly less adsorbent material than at the 70% reduction level. This is due to the increased contact by the mercury vapor as it passes through the built up filter cake. Although the fabric filter has a high capital cost it is less on an annualized basis than the additional adsorbent material cost. This approach also has the added benefit of minimizing the potential detrimental impacts of carbon use.

The final reduction phase of 90% reduction at 15 years after rule implementation based on the installation of a fabric filter system after the adsorbent injection at each of the major units. It also assumes some level of adsorbent injection will have to be implemented on some of the smaller units. However, it may not be practical to install this system or achieve this high of a reduction on all units. Therefore this requires reductions greater than 90% on the major units to achieve the overall reduction goal. This higher level of reduction may require the maturation of alternative adsorbents or control technologies to be practical. The installation of a fabric filter system as well as optimizing a system to meet these reduction levels may require extensive engineering and rebuilding of existing exhaust systems.

The estimated cost of the proposed rule is based on the NETL information applied to the Wisconsin utilities at each of the discussed reduction levels. The control cost assume that carbon impacts are minimized thereby avoiding any land filling cost for flyash. The first phase costs are estimated at 0.02 cents per kilowatt-hour using activated carbon sorbent. For an average household consuming 1000 kilowatt-hour per month this results in an additional cost of \$2 per year and annual utility cost of \$8 million. The second phase results in a 50% mercury emission reduction with a cost of \$4 per year and annual utility cost of \$17 million. The final phase, a 90% mercury emission reduction, is estimated to cost \$10 per year per household and annual utility cost of \$35 million (see Table 5).

Table 5. Estimated Major Utility Mercury Reduction Costs

Utility Mercury Emission Reduction	Annual Utility Sector Cost (\$M)	Cents/kWh (System-wide)	Annual House Hold Cost (\$/year)	Estimated Mercury Reduction (pounds/year)
30%	8	0.018	2	626
50%	17	0.037	4	1,043
90%	35	0.080	9	1,877

Source: Wisconsin Department of Natural Resources, Bureau of Air Management

Indirect Impacts – The proposed rule would reduce atmospheric mercury emissions and subsequently reduce mercury deposition to Wisconsin’s environment. This would reduce the amount of mercury entering the State’s water bodies and over time, reduce the amount of mercury in fish and wildlife. The department believes that with a reduction of mercury deposition, there would be an eventual reduction in the number of water bodies with fish consumption advisories. Since fish consumption advisories can be viewed as having a potential negative impact on

the State's tourism industry, reducing the number of fish consumption advisories would have a positive economic impact on the State's tourism industry.

C. Social and Cultural Impacts

As appropriate, identify and briefly describe direct and indirect impacts on social or cultural environments, the regional availability of energy or other features not previously addressed.

With its abundant rivers and lakes, fishing in Wisconsin is a very popular social and cultural activity. The state sells approximately 1 million resident and 0.5 million non-resident licenses each year. The total number of people who fish in the state on an annual basis is over 1.8 million (including those not required to obtain a license). Eating the fish they catch is also popular for Wisconsin anglers. Mean fish consumption in the United States has been estimated to be approximately 36 meals of fish per year. However, in Wisconsin, license anglers were found to have a mean consumption rate of 42 meals of fish per year. In addition, the state has 11 Indian tribes and a Hmong community that because of their culture, consume greater amounts of fish. Members of Indian tribes average 75 meals of fish per year, an amount that is more than double the national average.

The proposed rule seeks to reduce mercury air emissions from major electric utilities. This reduction of mercury air emissions would result in a reduction of the deposition of atmospheric mercury to water bodies in the state and ultimately a reduction of mercury in fish tissue. A reduction of mercury in fish would have a beneficial effect on fishing as an activity in the state. Therefore, the proposed rule would have a strong positive social and cultural impact to the state.

The proposed rule is not expected to affect the regional availability of energy because it includes a provision that major electric utilities may request a variance from phased emission reduction requirements. Variance conditions include: an emergency electrical supply in Wisconsin or elsewhere, a major fuel disruption, an unanticipated disruption in the operation of a boiler unit, the implementation of a pollution reduction project, or any other event beyond the control of the major electric utility.

VI. ALTERNATIVES AND THEIR IMPACTS

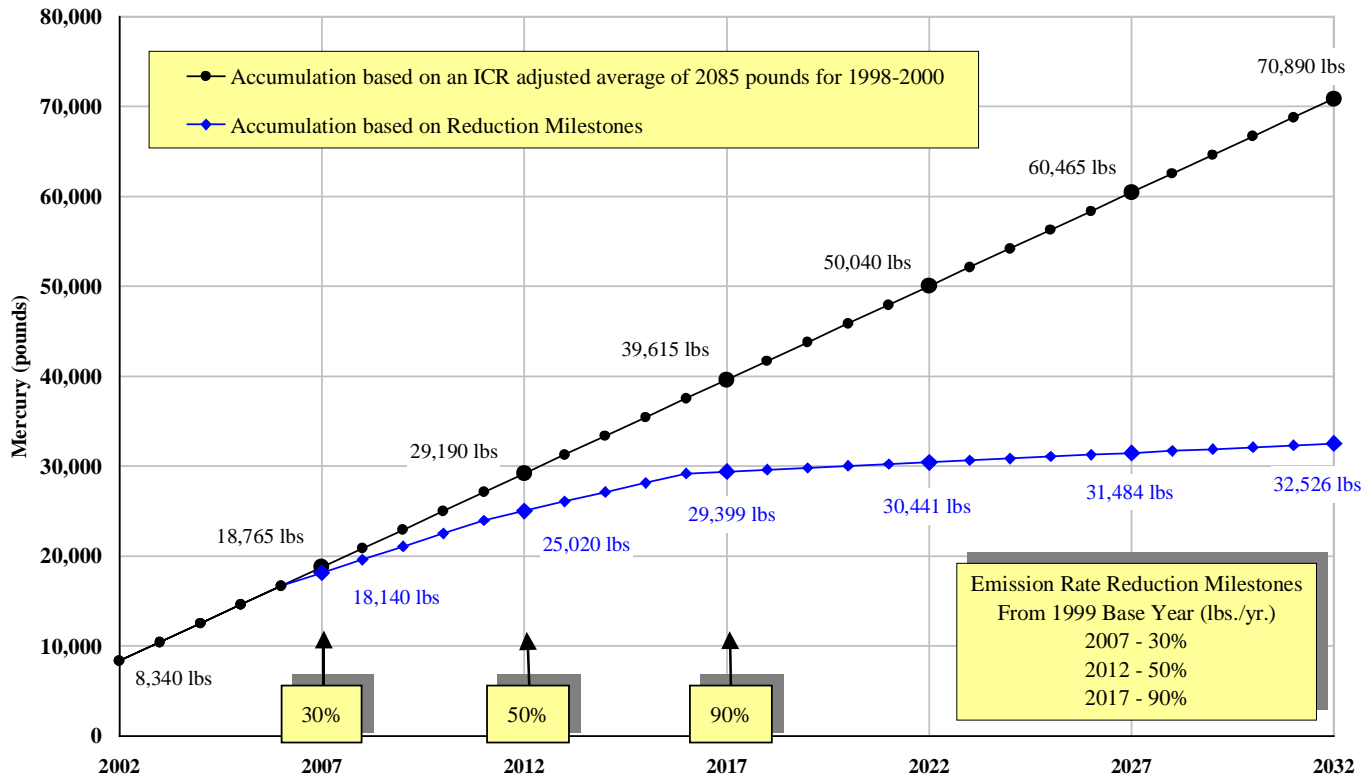
A. No – Action Alternative

Briefly describe the impacts of not implementing the proposal.

The proposed rule would reduce mercury emissions from major electric utilities, cap mercury air emissions from other major stationary sources, and require mercury emission offsets for new or modified major stationary sources. The objective of the proposed rule is to reduce mercury air deposition to the State's land and water surface and subsequently reduce mercury levels in fish and wildlife. Not implementing the proposal would mean that under current state regulations, mercury emissions in the state may not be reduced and could potentially increase over time. Fossil fuel-fired boilers used to generate electricity would not be required to reduce their emissions of mercury to the air and could actually increase their emissions of mercury. Other major sources could also potentially increase their air emissions of mercury. Statewide mercury emissions may also increase due to the addition of new or modified sources.

Current state regulations allow existing sources of mercury to continue emitting mercury to the air at levels at least equal to past emissions. If not regulated, a portion of these mercury emissions would continue to deposit onto the state's land and water surface resulting in continual contamination of the state's environment. At the present time, nearly all water bodies in the state have some type of a fish consumption advisory. Since mercury does not easily break down and actually accumulates in the environment including fish and wildlife, the total pounds of mercury in the environment increases every year. Based on 1999 emissions of 2085 pounds per year, by the year 2032, 70,890 pounds of mercury will have been released by fossil fuel-fired boilers used to generate electricity in Wisconsin (see chart A).

CHART A:
Projected Mercury Accumulation In The Environment From
Major Electric Utility Plants Located In Wisconsin



NOTE: Loading to the environment set to zero at beginning of 1999
 Source: WDNR Bureau of Air Management

Continual contamination of the state's environment would mean that the problem of fish consumption advisories would most likely continue and may actually get worse as advisories for certain types and sizes of fish are expanded for individual water bodies. This would increase the risk to human health for that portion of the population that consumes fish. A continued increase in the level of fish consumption advisories in the state as a result of continued contamination of the state's water bodies could potentially have a negative impact on the state due to a reduction of recreation and tourism activities.

B. Major Changes

Identify and briefly describe major changes to the proposal that would satisfy known or obvious concerns of interested parties, and describe the impacts.

The proposed rule would require mercury emission reductions from major electric utilities, cap mercury emissions at other major stationary sources, and require emission offsets for new or modified major stationary sources. The following are potential concerns with the proposed rule.

- 90% Reduction - The proposed rule would require that major electric utilities achieve a 90% reduction of mercury air emissions from baseline emissions within 15 years of rule promulgation. A potential concern may be that major electric utilities would not be able to meet the 90% reduction requirement within 15 years of rule

promulgation because of cost and/or the unavailability of technically available emissions control technology. Changing the 90% reduction requirement to a lower percentage may allow for these sources to achieve the required mercury air emission requirements of the proposed rule in a less costly manner. Technology to control a lower reduction requirement may be more readily available. The impact of a lower final reduction requirement would be that more mercury would deposit onto Wisconsin's environment than if sources reduced their emissions by 90%. The proposed rule does require the Department to periodically evaluate reduction requirements taking into consideration technology developments.

- Emissions Cap and Offsets – Under the proposed rule, other major stationary sources would be required to cap their emissions of mercury using 1998, 1999, and 2000 emissions as a baseline and new sources or modifications would be required to obtain mercury emission offsets at a ratio of 1.5 to 1. A potential concern may be that a cap and offset program for mercury emissions may prohibit industrial expansion of certain industries. Removing the cap and not requiring mercury emission offsets for new or modified stationary sources may result in increased air emissions of mercury if sources expand or grow.
- Volunteer Program – The proposed rule would include mandatory mercury emission reductions from major electric utilities, cap emissions from other major stationary sources and require mercury emission offsets for new or modified major stationary sources. Requiring state sources to comply with a state only rule may be a concern since a portion of the mercury emissions deposited to Wisconsin are from other states. It may be viewed that sources emitting air mercury emissions would be placed at a competitive disadvantage compared to the same type of sources in neighboring states. Changing the rule to a volunteer program could mitigate this concern. However, it is unknown if a volunteer program for reducing mercury air emissions would be successful and real reductions of atmospheric mercury emissions would occur in the state. Based on Department experience with ozone voluntary programs and climate change initiatives, it is likely that a volunteer program would be less effective.
- Federal Program – In December 2000, USEPA made a determination under the Clean Air Act that mercury air emissions from electric steam generating units need to be reduced because of the threat of such emissions to human health. The agency is now required to propose regulations by December 15, 2003 and issue final rules by December 15, 2004. Affected sources would have to be in compliance by December 15, 2007. It is unknown what mercury reductions will be contained in the federal rule. Therefore, a concern may exist that emission reductions achieved by Wisconsin major electric utilities under the state rule may not be credited under the future federal rule. This may cause confusion regarding reductions and schedules that sources would need to meet leading to potential compliance issues. A provision exists in the proposed rule requiring the Department to evaluate the effects of pending federal regulations within six months of the proposal date of the rule. However, a certain level of uncertainty may still exist for sources required to reduce their mercury emission since it would still not be known how future federal air mercury regulations would affect the proposed state rule.
- Trading – The proposed rule would allow major electric utilities and other sources to participate in the trading of emission reduction credits to achieve compliance with emission reduction requirements. There may be a concern by environmental organizations that trading emission credits could potentially allow certain electric utility plants to maintain their current level of mercury emissions simply by purchasing needed credits. Because of the emissions offset requirements of the proposed rule, the Department does not believe that mercury emissions would increase in localized portions of the state because of emission credit trading. However, trading may create a situation where mercury emissions are not reduced in a localized portion of the state. These local mercury emissions may continue to contaminate local water bodies. Removing the trading provisions of the proposed rule would alleviate these concerns. However, without trading provisions in the rule, sources required to reduce emissions may have a decreased level of flexibility for achieving reductions and an increase in financial costs. A provision does exist in the proposed rule that requires the Department to assess the impacts of trading on local water quality impacts as a part of its evaluation report.

C. Other Alternatives

Describe and evaluate other reasonable alternatives and explain why they were rejected. As appropriate, address legislative alternatives, or techniques used by other states or other agencies to accomplish the objectives stated in "III-Proposed Description" above.

The proposed rule requires major electric utilities to reduce their air emissions of mercury, caps mercury emissions from other major stationary sources, and requires emission offsets for new or modified major stationary sources of mercury. The objective of reducing mercury emissions in Wisconsin is to reduce mercury deposition to the state's environment. An alternative to the proposed rule could be to achieve mercury emission reductions, caps, and offsets through negotiated voluntary cooperative agreements established with fossil fuel-fired boilers used to generate electricity and other affected sources. This alternative would be more similar to a volunteer program and may allow for maximum flexibility in establishing the reduction goals and schedules for individual sources. It was rejected because the Department believes that the level of participation by sources emitting air emissions of mercury would be limited. This would result in overall air mercury reductions that are much less than the proposed rule.

VII. EIS RECOMMENDATION

- A. *State the EIS recommendation and explain why this rule proposal is or is not a major and significant action under s. 1.11, Wis. Stats., in terms of All of the following factors.*

Based on the analysis of Proposed Chapter NR 450, Wis. Admin. Code, pertaining to Control of Atmospheric Deposition of Mercury Emissions, it is determined that under s. 1.11, Wis. Stats., the proposed rule is not a major state action that would significantly affect the quality of the human environment and therefore, an EIS (Environmental Impact Statement) is not required.

1. *The extent of short-term and long-term environmental effects including secondary effects: particularly to geographically scarce resources such as historic or cultural resources, scenic and recreational resources, prime farmland, threatened or endangered species or ecologically critical areas.*

The rule proposal would reduce atmospheric emissions of mercury from major electric utilities, cap mercury emissions from other major stationary sources, and require mercury emission offsets from new or modified major stationary sources. The Department expects that this will result in reduced atmospheric mercury to Wisconsin's environment including land and water resources and ultimately fish and wildlife. The reduction of mercury to the State's water bodies with the reduction of fish consumption advisories would produce a positive effect on recreation. There would also be a positive effect on threatened and endangered species that consume fish, and ecologically critical areas that are currently contaminated with mercury. There are no expected short-term or long-term negative effects to any geographically scarce resources including historic, cultural, or scenic resources, or prime farmland.

2. *The extent of cumulative effects of related actions or other activities occurring locally that can be reasonably anticipated, and that would compound impacts.*

There are no known locally occurring related actions or other activities that would compound the impacts of the proposed rule. There is a federal activity to regulate mercury emissions from coal and oil (fossil fuels) fired utility boilers as a result of USEPA's determination published in December 2000. USEPA is on a schedule to propose regulations by December 15, 2003 and promulgate rules by December 15, 2004. It is not known if and how the federal regulations would affect the impacts of the proposed rule.

3. *The degree of risk or uncertainty in predicting environmental impacts or effectively controlling potential environmental impacts including those relating to public health or safety.*

There is some uncertainty regarding the environmental impacts of the proposed rule. First, it is not completely known how many or exactly which water bodies in the state would show a reduction in mercury levels with a corresponding reduction of fish consumption advisories as a result of reducing mercury air emissions from fossil fuel-fired boilers used to generate electricity located in Wisconsin. Second, it is not completely known how many years would be required for any particular water body in the state to fully recover from mercury contamination as a result of reducing mercury air emissions from fossil fuel-fired boilers located in the state. These uncertainties are based on the lack of a complete understanding of the atmospheric transport and deposition of mercury emissions from Wisconsin sources. However, since the reduction of mercury to water bodies would be a positive

environmental effect, the degree of risk or uncertainty of the proposed rule is not deemed a significant negative impact to public health and safety.

4. *The degree to which the action may establish a precedent for future actions or foreclose future options. This includes consistency with plans or policy of local, state or federal government such as Department wetland policy or local zoning.*

There is some potential that the proposed rule will initiate and support future actions by other states to promulgate rules to regulate mercury air emissions from fossil fuel-fired boilers used to generate electricity and other sources of mercury. The proposed rule may also assist in development of federal rules to regulate mercury emissions from coal and oil-fired utility boilers. USEPA is under a schedule to propose rules regulating mercury emissions from utility boilers by 2003 and promulgate final regulations by 2004. Regulations to reduce mercury emissions from other states either through federal rules or rules by other states would be beneficial to Wisconsin since a portion of mercury deposited to the state is from sources located outside of Wisconsin. Therefore, any precedent established by the proposed rule would be considered a positive action.

5. *The degree of controversy over the proposal's effects on the quality of the human environment.*

There is some degree of controversy over the uncertainty of the proposed rule on the quality of the human environment. This controversy relates to the overall impacts that would occur to water bodies in the state as a result of reductions of mercury air emissions from fossil fuel-fired boilers used to generate electricity located in Wisconsin. Opponents of the proposed rule may argue that it will have no significant impact on reducing mercury to the state's water bodies and eliminating fish consumption advisories. Others may argue that it doesn't reduce emissions soon enough or require reductions from all sources of mercury. These arguments may be based on the lack of a complete understanding by the scientific community on the contribution that Wisconsin major electric utilities and other major stationary sources have on the deposition of mercury to the state. However, the Department believes that based on the bioaccumulative properties of mercury, and the current level of control technology, the proposed rule represents a balanced approach to reducing mercury emissions to the air. Reducing mercury from major electric utilities in the state will over time, reduce mercury to the state's environment. In addition, the proposed rule contains provisions for periodic assessments of the rule and allows for adjustments in the regulations. Since the anticipated effect of reducing mercury to the State's water bodies would be a positive effect on the human environment, and there are no known negative environmental effects regarding mercury emission reductions, the controversy is not considered to be significant to the quality of the human environment.

VIII. ENVIRONMENTAL ANALYSIS CONTACTS

List agencies, groups, and individuals contacted regarding this analysis.

<u>Contact</u>	<u>WI DNR Program</u>	<u>Information Provided</u>
1. James Amrhein	Fisheries Mgt. & Habitat	Fish Advisories, Recreation/Tourism, Wildlife
2. Thomas Karman	Air Management	Economic Costs, Emissions Inventory
3. Douglas Knauer	Integrated Science Services	Mercury Transport and Deposition
4. Andrew Stewart	Air Management	Emissions Inventory
5. Jon Heinrich	Air Management	Proposed Rule
6. Caroline Garber	Air Management	General Review
7. John Shenot	Cooperative Env. Assistance	General Review

8. Paul Koziar	Waste Management	General Review
9. Tom Steidl	Legal Services	Legal Review
10. James Pardee	Integrated Sciences Services	Analysis Review